Abstract

The invention is directed to a continuous hydrogenation process in which a hydrogenable compound is dissolved in a working solution with hydrogen and a heterogeneous catalyst. At least part of the hydrogen-containing waste hydrogenation gas generated in the reaction is compressed and then recycled into the hydrogenation reactor. A jet pump is used for the compression of the waste hydrogenation gas and a liquid or gaseous feedstock of the hydrogenation process is used as the motive agent. Preferred motive agents are the hydrogenation gas or a working solution recycled into the process. The process is particularly suitable for performing the hydrogenation step in the anthraquinone process for the production of hydrogen peroxide.